European Business Case Development Workshop

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European Datalink Business Case

- **From an airspace user perspective**
- **Two parts:**
  - Probabilistic Cost Benefit Analysis
    - quantitative
    - influence model
    - cost and benefit assessment
    - sensitivity analysis
  - Strategic Case
    - qualitative
    - qualitative value assessment of long term growth capability/scalability

Development approach

- **High Level Stakeholder involvement and reviews through Workshops:**
  - Kick-off workshop (20 - 21 April)
  -
  - Mid- term review workshop (September)
  -
  - Final review workshop (End 1999)
- **In between workshops participants are expected to actively contribute to the development of the Business Case:**

Business Case Development is a JOINT activity

Workshop participants

- Aircraft Operators
- IATA
- Air Traffic Service Providers
- Boeing
- Airbus
- FAA
- EUROCONTROL
- AOPA
- EBAA

Development Steps

- **Step 1**
  - Define European context
- **Step 2**
  - Adapt C/AFT influence model
- **Step 3**
  - Collect and validate input data
- **Step 4**
  - Produce results, draw conclusions and write report

Workshop Objectives

- To kick-off the development of a European Datalink Business Case
- To understand the European business environment
- To understand the C/AFT approach
- To discuss business case issues and agree actions to resolve them
- To discuss the Strategic Case

Workshop Agenda

- **The European context**
  - LINK2000+
  - The Business Case environment
    - general
    - airlines
    - ATSO
- **C/AFT**
  - Introduction
  - Decision Logic Diagrams
  - US C/AFT analysis
- **Business Case assumptions and issues**

Workshop Agenda

- The strategic case
- Conclusions, Planning and Actions
- Next workshops
- Closing (21/4, 17.00hr at the latest)

The European context

LINK 2000+

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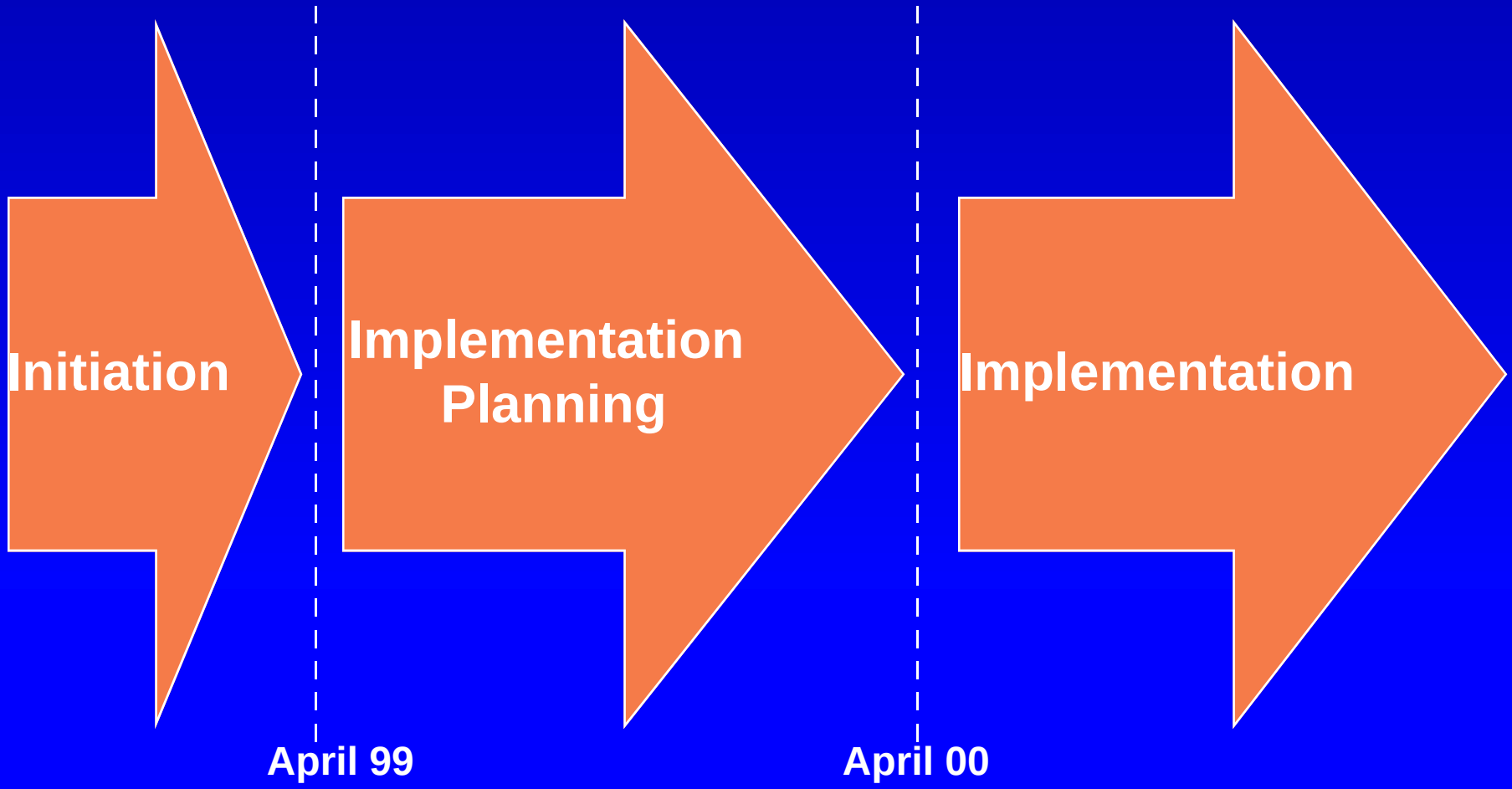
LINK 2000+ Objectives

- air/ground data link services for en-route ATC
- globally compatible
- small number of “core area” ACCs
- discretionary carriage by airlines
- 2002 - 2007

Programme Time Frame



Deliverables of Implementation Planning Phase

- Master Plan
- Business Case
- Programme Management Plan*

Need for a Business Case

- Provide a basis for stakeholder decision on commitment
- Provide a basis for EUROCONTROL management adoption of the programme

The European context

General

The Business Case Environment

- The Characteristics
- The Strategic need
- The Drivers
- The Incentives
- The Planning
-

Characteristics airspace

- Complex airspace
- Small sectors, many States/organisations
- Demand increase of 4 - 7 % per year
- 86.5% of Flights is internal ECAC
- B737/MD80/A320 - EA32/ATR42/AT72/BA46/B757/F50 = 50% of a/c
- Most flown distance: 100 - 200 NM

*97 data

Characteristics
Route Charges

- **IFR flights pay charges for the number of Service Units. For a flight the following formula is applied:**
  - Nr. Service Units = Distance Flown (km)/100X?(Mtow/50)
- **Unit Rates (State dependent):**
  - Cost basis/est. Service Units
- **Cost basis:**
  - calculated every year
  - composed of investments (depreciation and interest) and operating costs
  - also included are the quote parts of costs for

Characteristics Route Charges

- **More flights *and* Same Cost Basis:**
  - lower Unit Rates - -> Lower Route Charges
- **More flights *and* higher Cost Basis, Route Charges:**
  - Higher if ^flights<^Cost Basis
  - Lower if ^flights>^Cost Basis
  - Same if ^flights=^Cost Basis

Strategic Need (ATM)
- The Pull -

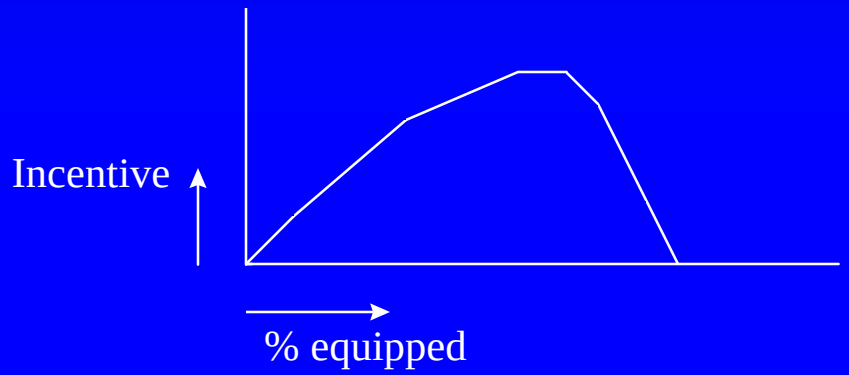
- **European ATM system is approaching the *a point of saturation* (expected between 2005 and 2010)**
- **Behaviour of system:**
  - exponential relation between demand increase and delay
- **RVSM, more sectors (8.33) will enable growth in the short term**
- **ATM2000+ specifies ATM measures to gain capacity and to reduce demand sensitivity**
- **Majority of measures require datalink as an enabler**
- **Deployment of datalink requires 5 - 7years**
- **N**

The Drivers - The Push

- **US - ACARS saturation: AOC N/A costs avoidance**
- **US - penalties on ACARS: ACARS penalty avoidance**
- **Europe - AOC situation: a Driver?**
- **US - ATC delay reduction: savings on DOC/flight**
  - slow ramp-up of benefits starting at 25% equipage
- **Europe - ATC delay reduction: expected**
  - ramp-up also slowly

The incentives/1

- **Need to be as much as possible:**
  - Immediate and exclusive: competitive advantage
- **Operational:**
  - exclusive operational benefits require segregation of airspace: difficult
  - ‘normal’ operational benefits are not exclusive



The incentives/2

- **Financial:**
  - Discounted Route Charges: requires political support
  - Effective
- **Directives (mandatory implementation)**
  - Too early:
    - high implementation costs due to high retrofit
  - Too late:
    - result in disadvantages for equipped a/c
  - Right
    - when incentives are levelling off ?

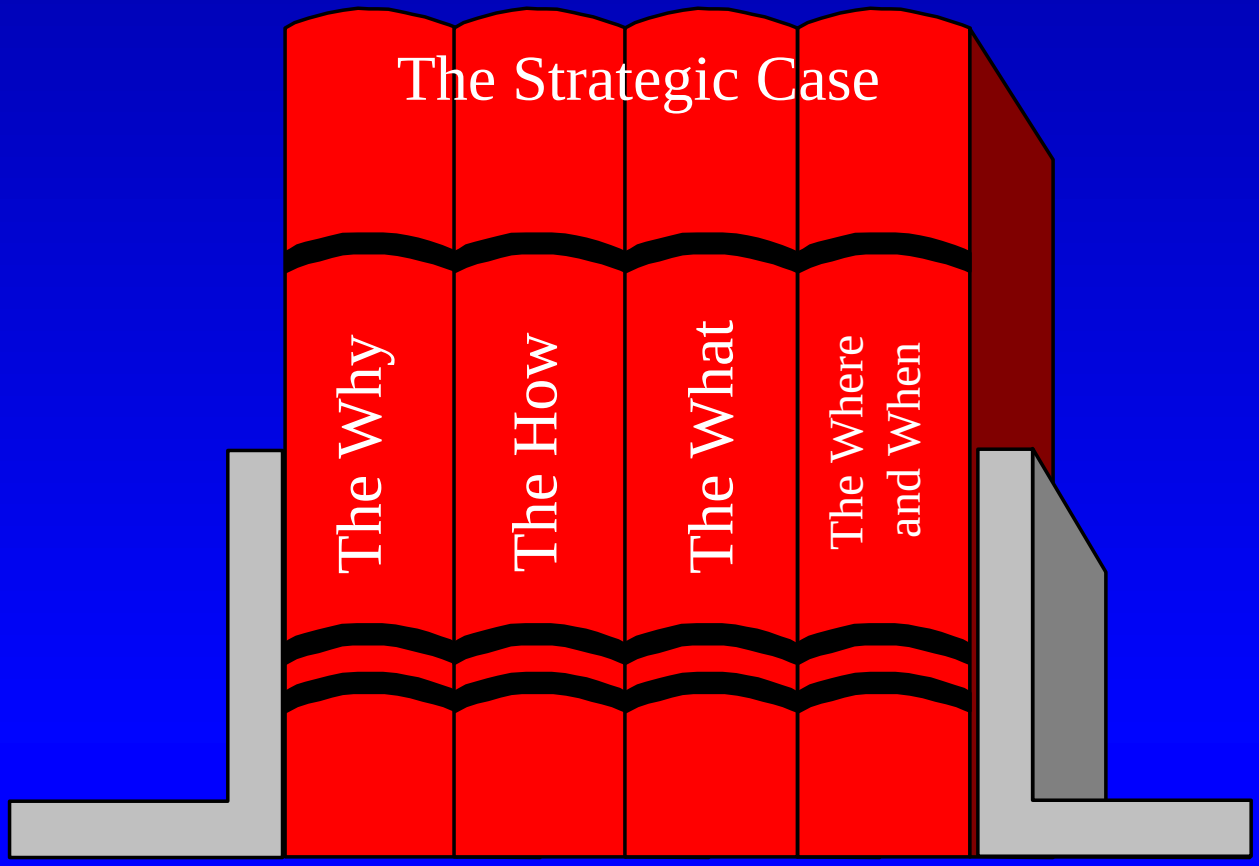
Planning

I.e. when to start deployment?

- **Too early:**
  - no benefits
  - no ROI within acceptable period
  - creates undesired advantages for competition
- **Too late:**
  - missed window of opportunity to built critical mass of equipped a/c
  - excluded from benefits (operator perspective)
  - creates advantages for competition
- **Right moment:**
  - Within window of opportunity
  - allows for lessons learned/training etc.
  - creates competitive advantage

The Strategic Case

Flow of Arguments


The Strategic Case
The Why
The How
The What
The Where and When

Starting Point: The Need - The Why

- **Aircraft Operator:**
  - AOC/AAC
  - cost reduction
  - competitive advantages
- **ATM:**
  - accommodate traffic growth
  - increase safety
  - reduce delay
  - reduce costs
  - increase efficiency

The Means - The How

- **Aircraft Operators:**
  - automation and integration
  - information management
  - enabler: data communication
- **ATM**
  - short term improvements
  - medium/long term improvements
  - CDM
  - ATM 2000+
  - enabler: data communication

Data Communication is a common enabler

The Solution - The What

- **Operational:**
  - AOC services (aircraft operator specific)
  - ATM datalink services
    - deployment strategy
    - a/c dependent
- **Technical:**
  - datalink technology (subnetwork/internet)
    - alternatives analysis/assessment
- **Institutional:**
  - level of organisational integration
  - role of service providers
  - common AOC/ATM infrastructure

The Place and Time - The Where and When

- **Driven by AOC needs:**
  - VDL/2 deployment plans
  - AOC applications
  - avionics
    - a/c new deliveries and retirements
  - infrastructure
- **Driven by ATM needs:**
  - ATSO implementation plans
  - ATM datalink applications
  - infrastructure

The Conclusion